Amendments to the Specification:

Please replace the paragraph beginning at page 15, line 28 with the following amended paragraph:

In contrast, regular cytospin preparations can result in a loss of up to 2/3 of the cells. Information on cell number is unavailable for most studies using microscopic rare event detection because these studies fail to record the total number of cells actually being analyzed on the slides. Rather, these experiments merely relate the number of positive events to the total number of cells processed, assuming a complete recovery. This introduces a bias: not only was it found that cells are indeed inevitably lost during preparation, but the recovery can vary greatly between samples of a given type (see "Range" column in Table 1) as well as according to the type of sample analyzed. It was found that adhesive glass microscope slides from Marienfeld Laboratory Glassware (Paul Marienfeld GmbH & Co~~; www.superior.de~~) were excellent substrates for producing a cellular specimen field for subsequent fluorescence microscopy, because these slides were able to capture a homogenous cell monolayer (optimal cell density with minimal overlap). Once the media is introduced to the slide, treatment with any aldehyde-based fixative (e.g., paraformaldehyde, formalin, gluteraldehyde, cross-linking agent) fixes the cells. In certain cells types where the antigen is not at the cell surface, the cells can be permeablized, using a permeablizing agent (e.g., methanol, TRITON). If the antigen is a surface antigen, then the permeablization is not required. Exposure of the slides to an organic solvent (e.g., alcohols, ketones, methanol, ethanol, acetone) can be used to permeablize the cells, and certain solvents (e.g., methanol) can both fix and permeablize. Cell culture media can be any media that can cover free binding sites, or can have proteins, including for example RPMI or DMEM. Physiological buffer solutions are those that are compatible with cells and include for example, any isotonic solution, or PBS. Cell dyes are any dye suitable to stain a cell and include for example, DNA dyes, cytoplasmic dyes, mitochondrial dyes, DAPI, calcein and the like. With the proper specimen preparation, any unexpected cell type in a biological tissue or fluid can be detected using the invention. For example, the presence of smooth muscle cells in blood may indicate atherosclerosis. In another example, packaged blood in a blood bank can be screened

for the existence of common pathogens transmitted by transfusion, such as human immunodeficiency virus, hepatitis B virus, or cytomegalovirus.

Please replace the paragraph beginning at page 17, line 8 with the following amended paragraph:

When the sample to be analyzed is not a biological fluid such as blood, different devices can be used to collect samples from, e.g., air. In general, an air sampling device has a collection chamber containing liquid through or beside which air or gas is passed through, or containing a porous filter that traps particulates (e.g., target bodies) as air or gas passes through the filter. For collection chambers containing liquid, the collection liquid can be centrifuged or otherwise treated to separate particles from the liquid. The separated particles are then deposited onto a substrate for labeling or analysis. For collection chambers containing a filter (e.g., nitrocellulose), the filter can act as a substrate for subsequent labeling or analysis. Alternatively, particles can be washed from the filter, or the filter can be dissolved or otherwise removed from the particles. A filter collection chamber can also be adapted to collect particles from a liquid (e.g., water supply sample or cerebral spinal fluid) flowing through the filter. In addition, as discussed above, a liquid sample can be centrifuged to remove any particulate material present in the liquid. In instances when the test material remains in solution in the liquid sample and undesirable particulate matter is removed (e.g., by filtration), the mother liquor can be sampled (either in solution, or upon *in vacuo* drying of the sample solution) for analysis. A variety of samplers are known and available for use with the present invention. See SKC, Inc. ~~(www.skc.com)~~, which sells the SKC BioSampler® and other sampling devices.

Please replace the paragraph beginning at page 23, line 28 with the following amended paragraph:

As mentioned above, a wide variety of fluorescent molecules are known and available. It is estimated that over 50,000 dyes are available from Eastman Kodak, Polaroid, Fuji Film, and Molecular Probes ~~(www.probes.com)~~. Examples of molecules suitable for nucleated cell targets include DAPI, propidium iodide, acridine orange, and YOPRO.

Please replace the paragraph beginning at page 24, line 2 with the following amended paragraph:

The various components required for the detection systems are commercially available. The detector can be any means (e.g., instrument, combination of mirrors and/or lenses suitable, photomultiplier, or other detecting means) for measuring, recording, imaging, or detecting light, fluorescence or other energy transmission, including excitations, emissions, and the like. In general, the system includes a fluorescent microscope with a motorized stage (e.g., Nikon Microphot-FXA or Nikon Eclipse 1000, both from Nikon, Japan; stages from Ludl Electronic Products Ltd., Hawthorne, NY or Axioplan 2 IE MOT from Zeiss, Germany), fluorescence filters (either included or made to order from Omega Optical, Brattleboro, VT), a camera (e.g., CCD 72 camera from DAGE-MIT, Inc., Michigan City, IN; AxioCam from Zeiss, Germany; or SpectraVideo camera from Pixelvision ~~(www.pixelvision.com)~~), and a computer having a printer, monitor, storage medium, display, and software necessary for implementing the invention. Many of the listed components are available from vendors such as Nikon, Zeiss, Georgia Instruments (Roswell, GA), Vaytek (Fairfield, IA), Applied Imaging, Inc. ~~(www.micrometastasis.org/metfs1.htm)~~, and Chromavision Medical Systems, Inc. ~~(www.chromavision.com)~~.

Please replace the paragraph beginning at page 24, line 29 with the following amended paragraph:

The algorithm for the detection and identification of target bodies is based on commercially available software for biological image analysis (e.g. Image Pro Plus from Media Cybernetics, ~~www.mediacy.com~~; or KS 400 from Kontron, Germany). The inclusion criteria for the detection of target bodies can be for example: